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ARITHMETIC.

Conducted by B. F. FINKEL, Kidder, Mo. All contributions to this department should be sent to him.

SOLUTIONS TO PROBLEMS.

29. Proposed by R. H. YOUNG, West Sunbury, Pennsylvania.

An interest bearing note dated August 1st, 1892, was discounted at 90 days at 8%. The face of the note was $750, and the proceeds $759.982. What was the date of discount?

Solution by Professor G. B. M. ZERR, Principal of High School, Staunton, Virgina, and P. S. BERG, Apple Creek, Ohio.

90 days + 3 days grace = 93 days.

Interest on $1.00 for 93 days at 8% = $.0206⅔.

$1.00 − $.0206⅔ = $.9793⅓ = proceedr of $1.00

$759.982 ÷ .9793⅓ = $776.0197, the amount of the note at the end of the 90 days.

$776.0197 − $750. = $26.0197, interest.

Interest on $750 for 1 year at 6% = $45.00.

$26.0197 ÷ $45 = 6 months 27 days.

6 months, 28 days − 90 days = 3 months, 28 days.

August 1, 1892 + 3 months 28 days = November 29, 1892.

∴ The note was discounted November 29, 1892.

30. Proposed by F. P. MATZ, M. Sc., Ph. D., Professor of Mathematics and Astronomy in New Windsor College, New Windsor, Maryland.

While dressing a fifty-cent chicken, a poulterer found a fifty-dollar diamond in the chicken's gizzard. He sold the chicken at a profit of 25cts., changed with good money the conterfeit ten-dollar bill handed him by the unknown purchaser, and realized 50% of the estimated value of the dimond. What per cent. of gain, or loss, did the poulterer make? Suppos the purchaser of the chicken and of the diamond had been one person, what per cent of gain, or loss, would he have made after selling the diamond for $25 in good money?

I Solution by the PROPOSER.

The poulterer paid 50 cents for the chicken and gave away $9.25 in change. His total loss is, therefore, $9.75. His total gain, the amount realized on the dimond, is $25.00. Hence the poulterer's net gain is $15.25, which is 152½% of the capital invested by him. The unknown purchaser, investing $25, had aftea his transactions were made, a chicken the market-value of which was 75 cents, and also $9.25 in good money as change. On his dimond-transaction, he neither gained nor lost. Therefore, the unknown purchaser's total gain is $10., which is 40% of the capital by him invested during his transactions.

Different interpretations of the conditions of the problem, may lead to different results.